

# OBSERVATIONS ON DENSITY OF THE WESTERN GREY KANGAROO

(*Macropus ocydromus*)

By BRUCE SHIPWAY, South Perth

Though the Western Grey or Forrester Kangaroo (*Macropus ocydromus* Gould), is protected in a reserve which embraces an extensive part of the South-West of the State, nevertheless it is possible for a large trade in skins to be carried on. During 1945, according to figures supplied by the Fisheries and Game Department, 71,548 skins were stamped for royalty. The average weight of a skin is 1½ lb., and the price reached as high as 25/- per lb. Thus it will be seen that the kangaroo provides a natural resource of not inconsiderable value and it is of the highest importance to have data on the population statistics of the species to assess how well, or badly, it is standing up to the strain of hunting, the alteration of its habitat and the other factors which have a bearing on its survival.

Unfortunately field data of this kind are almost entirely lacking; what information exists is mainly anecdotal and limited to vague personal opinions. Whilst I was engaged with the party conducting the preliminary survey for the proposed standard gauge railway between Toodyay and Midland Junction, along the Avon Valley, I interested myself in obtaining some definite figures on the kangaroo population of the area.

Part of the country traversed by the proposed railway includes an area of about 250 square miles of uninhabited land that is not used to any extent for grazing or agricultural purposes. This is located along the southern side of the Swan and Avon Rivers and is centred around their junction—a point marked by the confluence of the Chittering Brook—about 30 miles north-east of Perth. It is typical Darling Range country, rugged and hilly, with altitudes varying from 100 feet above sea-level, in the river bed, to 1,200 feet on the plateau. The latter is covered by laterite or "gravel" on which the jarrah (*Eucalyptus marginata*) is the principal forest tree. On the precipitous slopes where the underlying granite is exposed wandoo (*E. redunca*) grows down to the watercourses. During the winter water is abundant but in the dry summer months fresh water is restricted to one spring or soak per 100 square miles.

Eight miles of bush track passing through this area was selected as representative of the whole and this was traversed in a jeep each morning between 7 and 9 a.m., and again each evening between 4 and 6 p.m., the noise of the vehicle being relied on to "flush" the animals from their resting places. The number of kangaroos seen within a closely estimated 5 chains either side was recorded, thus giving a check on the density in one square mile.

A total of 60 counts were made on 30 days in a six weeks period during July and August, 1946, with an aggregate of 780

kangaroos seen. This gives a mean of 13.0 kangaroos per square mile. The evening counts were by far the larger, the maximum being 28, whereas the greatest number seen on a morning count was only 7.

I examined 20 kangaroos which had been killed by various means and found that 16, or 80%, were females, all with young in the pouch—these were furred after July. Twelve of the animals, or 60%, were infested with a parasitic nematode in the connective tissues of the hind legs, mainly around the knee joints.

A close watch was kept for smaller mammals, possums, etc. Very few Brush (*Macropus irma*) were seen and although the party included some first-class bushmen, there was a complete absence of reports of other marsupials.

## SOME NOTES ON THE LACE-WING

(*Acmonotus magnus*)

By WALLACE H. MATHEWS, South Perth

*Acmonotus magnus* is one of our most handsome Lace-wings and is a member of the Superfamily Myrmeleontoidea and of the family Ascalapidae. Dr. R. J. Tillyard says of them: "These beautiful insects are perhaps the most highly developed of all the Planipennia, they are diurnal insects, and like their analogues, the Butterflies, have developed long, knobbed antennae. They generally rest with wings drooping obliquely below the abdomen. Their hard oval eggs are laid transversely in masses around twigs or grass stalks, 50-100 together, and are frequently met with in the bush. The larva differs from true ant-lions in having much larger heads and jaws, the body is thick but more or less flattened above and the lateral processes are well developed, they hide away under debris. The cocoon is spherical but disguised by having bits of debris, leaves, etc., spun in with the silk." The males of this species have two raised conical processes dorsally on the second abdominal segment, from which they exude a volatile substance having the aroma of crushed wattle pods.

Their habitat is Australia generally, but they are absent from Tasmania and New Zealand.

Around Perth they are generally found from November to February, and may be observed at dusk hawking around telegraph or light poles for mosquitoes and other insects. An individual insect will remain in the one particular spot for several evenings. I have caught one and marked it, and then released it about 150 yards from its original position, and in a few minutes it was back on its old beat. I have repeated this as many as six times in the one evening, and always with the same result.

The larva does not make a pit but moves backwards just beneath the surface of the ground, with jaws and eyes exposed, and secures its prey in this way. Like all the Ant-lions it has no